



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/653,052	09/01/2000	Peter S. MacLeod	07844-356001	5508
21876	7590	07/12/2005	EXAMINER	
FISH & RICHARDSON P.C. P.O. Box 1022 MINNEAPOLIS, MN 55440-1022			NGUYEN, MADELEINE ANH VINH	
			ART UNIT	PAPER NUMBER
			2626	

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/653,052

Applicant(s)

MACLEOD, PETER S.

Examiner

Madeleine AV Nguyen

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08).
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This communication is responsive to amendment file on April 04, 2005.

Response to Arguments

1. Applicant's arguments filed on April 04, 2005 have been fully considered but they are not persuasive.

a. Applicant remarks that Balonon-Rosen fails to disclose or suggest the use of rendering intents while the disclosures of devices that perform rendering does not disclose rendering intents.

As stated in the rejection, the source rendering intent device is for render a source image and the destination rendering intent device is for render the image on the destination digital image device. The rendering intents for rendering the image data is inherently include in the rendering device since in order to render the image, the rendering device uses rendering intents to render the image. The Background of the present invention in pages 7-8 teaches the rendering of the image data by using different rendering intents which are commonly known in the art. Specifically, it states that "in 1993, members of the computer and color publishing industry began working toward a common approach to color management, The formed the International Color Consortium (ICC) in order to establish color standards that would help users achieve reliable and reproducible color through the entire reproduction process (page 4). An ICC color management system has three major components: a device-independent color space, device profiles, a Color Management Module (CMM). The Color Management Module (CMM) is the

Art Unit: 2626

part of the Color Management System (CMS) that maps one gamut to another (page 5). When colors consistent with one device's gamut are displayed on a device with a different gamut, a CMM uses device profiles and rendering intents to optimize the displayed colors between the two devices (page 7). Then, different rendering intents which are commonly known in the art are listed such as perceptual, saturation, relative colorimetric, absolute colorimetric (pages 7-8). Without teaching in details the rendering intents, Balonon-Rosen et al teaches the same subject matter such as the Color Management System (CMS) for mapping color gamuts, the International Color Consortium (ICC) and the source rendering and destination rendering of images (col. 1, lines 6-26; col. 2, lines 13-57; col. 26-30; col. 5, lines 47-63; col. 6, lines 8-12; col. 8, lines 14-45). Thus, by comparing the teaching in the Background of the present invention with Balonon-Rosen et al's teaching, it is inherently understand that the rendering devices in Balonon-Rosen et al rendering the image by using rendering intents which are known in the prior art as stated in the Background.

In addition, it is a matter of well known in the prior art at the time the invention was made to consider that the rendering intent device uses rendering intents to render the image data. For instance, Balasubramanian et al (US Patent No. 6,803,921) discloses a system having a plurality of rendering intent devices wherein each rendering intent device includes a plurality of rendering intents for rendering the image data. In Fig.2, Balasubramanian teaches the steps of selecting a rendering device (250) and selecting a rendering intent (260). Balasubramanian further teaches, "Rendering intents are known in the art. Examples of rendering intents include perceptual, relative calorimetric, saturation and absolute calorimetric... Rendering intent selection can be accomplished through an y conventional means. For example, the user can use a

Art Unit: 2626

keyboard to type the name of a rendering intent. Preferably the user is provided with a list of rendering intents from which the user may make a selection. Of course the user can opt not to make a rendering intent selection or to allow the color image processor to use a default rendering intent.” (col. 5, lines 23-43). Thus, there is no need to further illustrate that the rendering intent devices in Balonon-Rosen et al use rendering intents to render the image data, otherwise, Balasubramanian et al teaching is added in the rejection to support the idea.

b. Applicant remarks that Ohta fails to teach “zeroing the color components.”

Rather, Ohta discloses a color reproduction possible/impossible decision unit which outputs zero if the image data that has entered from the input device is within the color reproduction range of the output device and outputs non-zero if the image data that has entered from the input device is outside the color reproduction range of the output device.

Ohta teaches a decision unit 1 which executes processing for examining range of color reproduction. The decision unit 1 determines whether entered image data processing RGB values dependent upon the input device 117 is capable of being reproduced by the output device 118. Figs.3-4 illustrate the detailed construction of a color reproduction possible/impossible decision unit. In the first signal converter 1a, the image having RGB values dependent upon the input device 117 are transformed to the image data having the XYZ values based upon the profile connection space. In the second signal converter 1b, the color space transformation unit 10b subjects the entered image data having the XYZ values (intermediary data) to a color space transformation based upon the arithmetic operation of a 3x3 matrix. The image data having the XYZ values are transformed to image data having RGB values dependent upon the output device

Art Unit: 2626

118. Before the transformation from XYZ to RGB, the system has to determine whether the color reproduction enters from the input device 117 is outside the range or reproduction (gamut check). It is noted that the 3x3 matrix used in the gamut check and the 3x3 matrix used in color matching processing differ. The purpose of the gamut check is to judge, in highly precise fashion, color that cannot be reproduced by the output device. Accordingly, the 3x3 matrix for converting the XYZ values in such a manner that the six sides of the cube will be colors that are incapable of being reproduced is stored in the profile data (col. 9, lines 25-35). Thus, for gamut check, the color components of the XYZ values are zeroing since the 3x3 matrix is used in the gamut check, to judge whether a color expressed by the input image data is capable of being reproduced by the output device, and not for transforming to RGB values.

Therefore, the rejection of claims 1-23 is maintained.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, 8-13, 15-20, 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balonon-Rosen et al (US Patent No. 6,307,961).

Concerning claim 8, Balonon-Rosen discloses an apparatus for transforming data from a source device color space to a destination device color space, wherein the source device is associated with a source device profile and the destination device is associated with a destination

Art Unit: 2626

device color profile comprising means for transforming data from the source device color space to an intermediary color space (independent color space) using the source device color profile, a source rendering intent (source rendering technique), and the profile connection space, producing intermediary data (independent color space data); and means for transforming the intermediary data from the intermediary color space (independent color space) to the destination device color space using the profile connection space, a destination rendering intent (destination rendering technique), and the destination device color profile (Fig.1-2; Abstract; col. 1, line 67 – col. 3, line 8; col. 4, line 65 – col. 5, line 21; col. 8, line 7 – col. 8, line 45).

It is noted that the source rendering intent is for rendering an input image to a rendered image in the first image rendering device and the destination rendering intent is for rendering an output image to a rendered output image in the second image rendering device (Fig.2) based on the teaching in the Background of the present application (pages 4-8).

Balonon-Rosen does not directly teach the intermediary color space profile. However, Balonon-Rosen teaches in the Background of the Invention that “The ICC defines five major classes of color profile: device profile, device-link profile, color space conversion profile, abstract profile and named color profile. The ICC profile is a tagged file structure which includes three main sections: a header, a tag table and tagged element data... Among the most essential fields found in a device profile’s header is the profile connection space (PCS) field which indicates which device-independent units are used within tags which are utilized by the CMS when deriving parameters for its color transform model.” (col. 2, lines 18-31). In addition, “A device profile’s tags describe the relationship between device digits and the device-independent units of the profile’s PCS.” (col. 2, lines 44-46). It would have been obvious to one

Art Unit: 2626

skilled in the art at the time the invention was made to consider the profile connection space (PCS) taught in Balonon-Rosen equivalent to the intermediary color profile since it is the profile of the independent color space for wherein the transformation of data from the source device color space to the independent color space is performed and the transformation of data from the independent color space to destination color space is performed.

Concerning claims 9-11, 13, Balonon-Rosen further teaches that the source and destination rendering intents are different rendering intents (first image rendering device for the source and second image rendering device for the destination), (claim 9); the source device is a printing press (12, Fig.1) and the destination device is a proofing printer (10, Fig.1), (claim 10); means for receiving the data as an output of a graphic arts application (1, Fig.1), (claim 11); the intermediary color profile is a CIELAB color profile or a CIEXYZ color profile (col. 8, lines 26-45), (claim 13).

Concerning claim 12, Balonon-Rosen further teaches that the source rendering intent is a colorimetric rendering intent but fails to teach that the destination rendering intent is a perceptual rendering intent. However, in the Background of the Invention of the recent application, perceptual rendering intent is a matter of well known in the art (specification in pages 7-8). Besides, also from the Background of the Invention, it is stated that "The Color Management Module (CMM) is the part of the CMS that maps one gamut to another. When colors consistent with one device's gamut are displayed on a device with a different gamut, a CMM uses device profiles and rendering intents to optimize the displayed colors between the two devices." (page 7). It would have been obvious to one skilled in the art at the time the invention was made to include the perceptual rendering intent in the destination rendering intent of the system in

Art Unit: 2626

Balonon-Rosen since Balonon-Rosen also teaches the Color Management System (CMS) for gamut mapping and different rendering intents for improving the quality performance of (CMS) without limiting to any specific intent while perceptual rendering intent is commonly known in the art.

Claims 1-6, 15-20, 22, 23 are method claims of apparatus claims 8-13. Claims 1-6, 15-20, 22, 23 are rejected for the same rationales set forth for claims 8-13.

3. Claims 14, 7, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balonon-Rosen as applied to claims 1, 8, 15, 22 above, and further in view of Ohta (US Patent No. 6,124,944).

Concerning claim 14, Balonon-Rosen fails to teach means for zeroing the color components of the intermediary data before transforming the intermediary data. Ohta discloses a system for color reproduction having different input device profiles and output device profiles comprising means for zeroing the color component of the intermediary data before transforming the intermediary data (Figs.2, 3; col. 5, line 62 – col. 6, line 61; col. 7, lines 20-64; col. 8, lines 38-58). Specifically, Ohta teaches a decision unit 1 which executes processing for examining range of color reproduction. The decision unit 1 determines whether entered image data processing RGB values dependent upon the input device 117 is capable of being reproduced by the output device 118. Figs.3-4 illustrate the detailed construction of a color reproduction possible/impossible decision unit. In the first signal converter 1a, the image having RGB values dependent upon the input device 117 are transformed to the image data having the XYZ values based upon the profile connection space. In the second signal converter 1b, the color space

Art Unit: 2626

transformation unit 10b subjects the entered image data having the XYZ values (intermediary data) to a color space transformation based upon the arithmetic operation of a 3x3 matrix. The image data having the XYZ values are transformed to image data having RGB values dependent upon the output device 118. Before the transformation from XYZ to RGB, the system has to determine whether the color reproduction enters from the input device 117 is outside the range or reproduction (gamut check). It is noted that the 3x3 matrix used in the gamut check and the 3x3 matrix used in color matching processing differ. The purpose of the gamut check is to judge, in highly precise fashion, color that cannot be reproduced by the output device. Accordingly, the 3x3 matrix for converting the XYZ values in such a manner that the six sides of the cube will be colors that are incapable of being reproduced is stored in the profile data (col. 9, lines 25-35). Thus, for gamut check, the color components of the XYZ values are zeroing since the 3x3 matrix is used in the gamut check, to judge whether a color expressed by the input image data is capable of being reproduced by the output device, and not for transforming to RGB values.

It would have been obvious to one skilled in the art at the time the invention was made to combine the teaching of the zeroing means in Ohta to the system in Balonon-Rosen since both of them teaches a system having means for transforming data from a source device color space to an intermediary color space and means for transforming data from the intermediary color space to a destination color space.

Claims 7, 21 are method claims of apparatus claim 14. Claims 7 and 21 are rejected for the same rationales set forth for claim 14.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

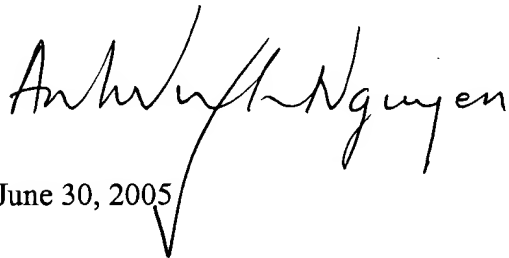
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Madeleine AV Nguyen whose telephone number is 571 272-7466. The examiner can normally be reached on Monday, Tuesday, Thursday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A. Williams can be reached on 571 272-7471. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


June 30, 2005

Madeleine AV Nguyen
Primary Examiner
Art Unit 2626